

GROWER'S COPY

COOPERATIVE EXTENSION SERVICE
AND EXPERIMENT STATIONSOIL TESTING LABORATORY
VOCATIONAL EDUCATIONAL BUILDING
COLORADO STATE UNIVERSITY
FORT COLLINS, COLORADO 80523

NUMBER OF SAMPLES

1

CLYDE SANCHEZ

DATE RECEIVED

4/17/78

BOX 208

DATE REPORTED

4/18/78

DOVE CREEK

CO

81324

COUNTY

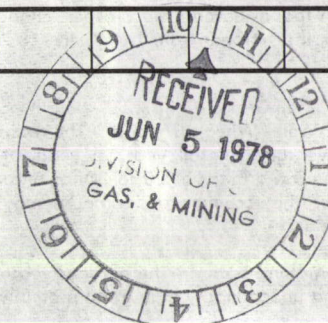
DOLORES

SOIL TEST REPORT

IDENTIFICATION		ROUTINE SOIL TEST RESULTS										ADDITIONAL RESULTS			
LAB. NO.	FIELD NUMBER	pH	SALTS mmhos/cm	ORGANIC MATTER %	NITRATE N ppm	PHOSPHORUS P ppm	POTASSIUM K ppm	ZINC Zn ppm	IRON Fe ppm	LIME %	TEXTURE	MANGANESE Mn ppm	COPPER Cu ppm	SAR	GYPSUM meq/ 100g
0926A	1152	8.4	O.K. .6	O.K. 1.1	V.Low 4	V.Low 1	O.K. 135	V.Low .50	Medium 4.5	HIG	CLAY LOAM				

IDENT.	FIELD INFORMATION					RECOMMENDED FERTILIZER LBS./A								OTHER		
LAB. NO.	ACRES	IRRIGATION	LAST CROP	YIELD- LAST CROP	MANURE T/A	PROPOSED CROP	YIELD GOAL	N	P ₂ O ₅	K ₂ O	Zn	FE (IRON)	Mn lbs/A	Cu	GYPSUM T/A	
0926A					0											

this soil needs nitrogen ~~and~~ phosphorus fertilization for crop production.
Zinc and iron spraying is essential for sensitive crops such as beans.



IMPORTANT INFORMATION PRINTED ON REVERSE SIDE

COOPERATING WITH U.S.D.A.

APPROVED

TITLE

P. Soltau
Assoc. Prof.

ATTENTION GROWERS

The recommendations provided are based on the soil analysis results of our laboratory and the information you supplied on the Information Sheet. They are guides to obtaining your desired yield developed from the research of CSU scientists and extension personnel and may require some modification for your specific situation.

The fertilizer recommendations are given in pounds/acre on the oxide basis for phosphorus (P_2O_5) and potassium (K_2O). All other nutrients are recommended on the elemental basis (N, Zn, etc.). In the case of correcting sodium affected soils, gypsum (or other corrective materials) is recommended in tons/acre of material as a soil amendment (not a plant nutrient).

It is the policy of the CSU Soil Testing Laboratory to recommend only those nutrients that offer a reasonable possibility of increasing the yield of your crop and in those amounts as closely as we can determine that are necessary to achieve your yield goal. Remember, however, that a high yield goal can be obtained only when proper fertilization is used in combination with a level of overall crop production management consistent with that yield goal.

Note 1 NITROGEN

Fertilizer nitrogen can easily be lost to the intended crop through leaching. Therefore, its management is of special importance. In cases of high N rates, sandy soils, or long-season crops, split applications will increase plant utilization of the fertilizer N, avoid late season deficiency, and reduce leaching loss.

a. Sugar Beets - Split nitrogen applications offer the opportunity to adjust the rate during the season in accordance with the yield prospect. This is especially important when fertilizing for a high yield since excessive nitrogen will reduce sugar yield. If the in-season yield prospect changes from the original goal, alter the nitrogen recommendation by 10 lbs N/ton yield difference expected. Apply all nitrogen before July 1 on medium and heavy textured soils and before July 10 on coarse textured soils.

IMPORTANT: Much of the nitrogen from manure is released in the latter part of the season which tends to retard sugar accumulation. Therefore, manure would be best used on other crops in your rotation such as corn.

b. Corn and Sorghum (Irrigated) - Split nitrogen applications prevent late season deficiency and offer the opportunity to adjust the rate of application in accordance with the yield prospect. If the in-season yield prospect changes from the original goal, alter the nitrogen rate by 40 lbs N/25 bu grain or 10 T silage.

c. Small Grains -

Winter Wheat (Dryland) - The recommendation is based on an "average" rainfall year. In years of exceptionally good soil moisture an additional 20 to 30 lbs nitrogen applied in early spring over the recommended amount may increase yield and grain protein.

Malting Barley - The nitrogen recommendation is based on avoiding unacceptably high grain protein yet obtaining a good yield.

d. Pasture and Meadows - Split nitrogen applications are necessary to maintain yield and protein content throughout the growing season. Applications should be split according to the number of harvests and yield potential of each harvest.

e. Legume Crops (Beans, Alfalfa, etc.) - These crops can utilize nitrogen from the air. When the roots are properly nodule nitrogen fertilization will not be beneficial.

Note 2 PHOSPHORUS AND POTASSIUM

Phosphorus is a non-mobile nutrient, staying where it is placed in all but the sandiest soils. Therefore, plowdown or band applications which place it in the most active root-feeding zone are consistently superior to topdressing. In the case of established perennial crops such as alfalfa and pasture, topdressing has proven to be a satisfactory method of application. For most rapid benefit, topdress at the earliest possible date (fall application will give better first season response than spring application).

IMPORTANT: Excessive rates of phosphorus fertilization will reduce the availability of zinc and iron, which in the case of sensitive crops (Note 3) could cause an actual yield reduction.

Potassium is more mobile in soil than phosphorus. However, there is little danger of leaching loss in all but the sandiest soils.

Note 3 MICRONUTRIENTS

Only zinc and iron deficiencies are common in Colorado. Crops grown in our state that are both "zinc and iron sensitive" (most likely to respond to fertilization with these nutrients) are: corn, sorghum, beans, potatoes, and most fruit trees. Turfgrass and many ornamental shrubs and trees are iron (but not zinc) sensitive.

a. Zinc - The most effective application method for inorganic products, such as zinc sulfate, is generally broadcast-plowdown in which the zinc is mixed thoroughly in the plant rooting zone. Banding is also effective and may be preferred in situations of shallow or minimum tillage. One application of 5 to 10 lbs zinc/A (15 to 30 lbs/A of zinc sulfate - 36% Zn) should be sufficient for 2 to 4 years production.

Effective zinc chelates may be used at about 1/3 the rate of inorganic products. They may be banded or mixed. Application should be repeated for each subsequent zinc sensitive crop.

b. Iron - Soil application of iron generally is not effective in Colorado. Deficiency is best corrected by spraying the crop with a 2% ferrous (iron) sulfate solution (1% solution for potatoes) at the rate of 20 to 30 gallons/A 10-15 days after crop emergence. Repeat application at 10-day intervals if yellowing of foliage persists. A 2% solution is prepared by adding 16 lbs iron sulfate (20% iron) to 100 gallons of water; include a surfactant (wetting agent).

c. Manganese - The most effective application method for inorganic products, such as manganese sulfate, is banding with an acid-forming fertilizer. Broadcast applications will

likely require at least twice the recommended banded rate to be effective. Do not reapply without a valid soil test.

d. Copper - Copper may be broadcast and plowed down or band applied with good results. Do not reapply without a valid soil test.

Note 4 DRYLAND PRODUCTION

Response to fertilizer applications under dryland production situations is highly dependent on the annual available moisture. In regions that average less than 15 inches rainfall per year, it is doubtful that fertilization is an economical practice, regardless of the soil fertility level. Greater responses are usually obtained from the sandylands in comparison with the hardlands due to greater water utilization efficiency.

Note 5 SALT AND SODIUM

Saline soils contain an excess of soluble salts which inhibits seed germination and plant growth. The only way to correct this condition and those cited below in your soil is to leach the salts from the plant root zone. Chemical amendments, conditioners, or fertilizers will not correct a salt problem. In order to leach the salts the soil must have adequate internal drainage to allow water to pass through it. The amount of good quality irrigation water passing through a foot of soil will decrease the salt concentration by the approximate percentages listed below:

Acre-feet of water/acre	% salt reduction expected
1/2	50
1	80
2	90

Our tests cannot determine if your field has adequate internal drainage or what steps are most practical in your specific situation. For this information we suggest that you visit your local Soil Conservation Service office.

When it is not practical or possible to correct a salt problem, the only alternative is to plant a relatively salt tolerant crop such as tall wheatgrass or barley.

Sodic soils (black alkali) contain an excess of sodium which causes them to be hard and cloddy when dry, to crust badly, and take water very slowly. These soils must have a source of soluble calcium to correct the situation. This calcium may naturally occur in your soil or irrigation water or must be added as an amendment. Gypsum is the amendment most frequently used. In some cases the soil already contains sufficient lime, then an acid or acid-forming amendment may be used to solubilize the calcium in the lime. Such amendments include sulfuric acid, elemental sulfur and lime-sulfur.

Saline-sodic soils contain large amounts of salts including sodium. This results in poor plant growth, although the physical condition of the soil and water intake may not be greatly impaired. Addition of a calcium furnishing amendment may or may not be necessary. Excess salts, including sodium, must be leached from the root zone as with saline soils.